EXHIBIT 1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Stephen R. Pinto et al.
Serial No. : 10/826,624
Filed : April 16, 2004

Art Unit : 2129
Examiner : Joseph P. Hirl
Conf. No. : 1303

Title : PREDICTIVE MODEL VARIABLE MANAGEMENT

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CLAIM CHART

Claim 1	**Comments**
A machine-based method comprising	In the prior approach, the model developers/users used their knowledge, experience and expertise to develop individual custom-designed models *manually* using conventional statistical software package, in particular, software provided by SAS Institute Inc., North Carolina
providing a graphical user interface that enables a user of a model generation tool to view and manage subgroups of contributory and non-contributory variables associated with generation of a predictive model including source variables associated with attributes of the original data and derived variables subsequently modified from the source variables.	In the prior approach, there was no graphical user interface that enabled a user of a model generation tool to view and manage subgroups of "contributory and non-contributory variables associated with generation of a predictive model including source variables associated with attributes of the original data and derived variables subsequently modified from the source variables."
Claim 2	
The method of claim 1 in which the derived variables include constructed variables, and transformed variables.	In the prior approach, there was no graphical user interface that enabled a user of a model generation tool to view and manage derived variables which included "constructed variables and transformed variables."
Claim 3	

The method of claim 1 also including enabling the user to move variables between subgroups using a pointer.	In the prior approach, there was no interactive graphical interface for "[moving] variables between subgroups using a pointer." The model developers/users used conventional statistical packages having manually entered interpretive code to assign variables to subgroups.
Claim 4	
The method of claim 1 in which the user interface enables a user to view, with respect to a selected variable, its definition and its response distribution relative to an outcome variable.	In the prior approach, there was no graphical user interface for viewing "definition and response distribution" of a selected variable. The model developers/users used conventional statistical packages to manually enter interpretive code that could generat print-outs showing variable definition and response distribution relative to the outcome variable.
Claim 5	
The method of claim 1 in which only variables within one of the subgroups are used in the model that is generated.	In the prior approach, there was no graphical interface for segregating variables from one of the subgroups so that "only variables within [the subgroup] is used in the model that is generated." The model developers/users used conventional statistical packages to manually enter interpretive code that could select and list variables from one of the subgroups.
Claim 6	
The method of claim 1 in which the subgroup to which each variable belongs is stored persistently.	In the prior approach, there was no means of graphically selecting a subgroup of variables to be stored persistently. The model developers/users used conventional statistical packages to manually enter interpretive code that only stored model results persistently including which variables were used in the model.
Claim 7	
A machine-based method comprising	In the prior approach, the model developers/users used their knowledge, experience and expertise to develop individual custom-designed models

	manually using conventional statistical software package, in particular, software provided by SAS Institute Inc., North Carolina
in connection with a project in which a user generates a predictive model based on historical data about a system being modeled, enabling the user through a graphical user interface to manage and view information about distributions and interactions based on strengths of measurements of predictor variables associated with the data.	In the prior approach, there was no graphical user interface to manage and view "distributions and interactions based on strengths of measurements of predictor variables associated with the [historical] data." The model developers/users used conventional statistical packages to manually enter interpretive code that merely generated tabular information about the predictor variables.
Claim 8	
The method of claim 7 in which the information includes a status of a predictor variable.	In the prior approach, there was no graphical interface that provided information including the "status of a predictor variable." The model developers/users used conventional statistical packages to manually enter interpretive code that sought to determine the status of a predictor variable.
Claim 9	
The method of claim 7 in which the information includes a status of a class of non-predictor variables.	In the prior approach, there was no graphical user interface that provided information including the "status of a class of non-predictor variables." The model developers/users used conventional statistical packages to manually enter interpretive code that sought to determine the status of non-predictor variables.
Claim 10	
The method of claim 7 in which the user interface enables the user to point and click to cause display of information about the variable.	In the prior approach, there was no interactive graphical user interface that enabled a user to "point and click to cause display of information about [a] variable."
Claim 11	
The method of claim 10 in which the information about the variable comprises at least one of: a description, a definition, a history of transformations, a response	In the prior approach, there was no interactive graphical user interface showing information about the variable that included any of at least "a

graph, and a link to the graph.	description, a definition, a history of transformations, a response graph, and a link to the graph."
Claim 12	
The method of claim 11 in which invocation of the link to the graph causes display of the probability of an event as a function of the variable.	In the prior approach, there was no interactive graphical user interface having a link that when invoked "causes display of the probability of an event as a function of [a] variable."
Claim 13	
The method of claim 7 also including enabling the user to cause a variable to be transformed, and including the transformed version of the variable in the information about predictor variables.	In the prior approach, there was no interactive graphical user interface which enabled the analyst to transform a variable and then "including the transformed version of the variable in information about predictor variables." The model developers/users used conventional statistical packages to manually enter interpretive code that transformed a variable and use the variable in a model.
Claim 14	
The method of claim 7 in which the predictor variables are grouped in the user interface, and also including enabling the user to move one or more than one variable from one group to another.	In the prior approach, there was no interactive graphical user interface for grouping or for "enabling [a] user to move one or more than one variable from one group to another."
Claim 15	
The method of claim 7 in which the graphical user interface represents filtered views of a data dictionary of an entire set of variables of the model.	In the prior approach, there was no data dictionary object and no graphical user interface that "[represented] filtered views of a data dictionary."
Claim 16	
The method of claim 7 in which the user interface enables the user to point and click to cause display of decision partition trees of the collection of predictor variables.	In the prior approach, there was no interactive graphical user interface that enabled model developers/users "to point and click to cause display of decision partition trees of [a] collection of predictor variables"
Claim 17	

The method of claim 7 in which the user interface enables the user to point and click to cause display of response distribution functions of the collection of predictor values.	In the prior approach, there was no interactive graphical user interface that enabled model developers/users "to point and click to cause display of response distribution functions of [a] collection of predictor values." The model developers/users used conventional statistical packages to manually enter interpretive code that generated "response distribution functions of the collection of predictor values."

EXHIBIT 2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Stephen K. Pinto et al.	Art Unit	: 2121
Serial No.	: 10/826,949	Examiner	: Tejal Gami
Filed	: April 16, 2004	Conf. No.	: 1606

Title : DIMENSION REDUCTION IN PREDICTIVE MODEL DEVELOPMENT

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION IN RESPONSE TO REQUEST FOR INFORMATION IN ACTION DATED MARCH 29, 2007

I, Richard Mansfield, declare:

I am the Chief Architect and Vice President Platform Technologies of Fortelligent, Inc., the assignee of this patent application.

My comments below are each preceded by the related requests of the examiner (in small, bold type).

I) What were the specific details of the modeling system referred to in the admission?

More than a year prior to April 16, 2004, the assignee's employees used individual custom-designed models to generate customer relationship management (CRM) information for customers of the assignee. The individual custom-designed models were each generated manually using the experience, expertise, and knowledge of model developers and the capabilities of commercially available statistical software, in particular, solutions from SAS Institute Inc., North Carolina.

From its records, the assignee is unable to reconstruct the contents of any of the specific individual custom-designed models in use prior to April 16, 2003, or the manner in which they were generated other than as disclosed in the information disclosure statement of May 27, 2005.

a) Do you have any documentation, either hard copies or in electronic form, showing this modeling system? If yes, please provide documentation in response to this interrogatory. Documentation should be interpreted broadly to include, yet not be limited to: press releases, advertisements, brochures, product manuals, web pages, patents and patent applications (both U.S. and foreign), presentations, technical journals, and product specifications.

None to the best of the undersigned's knowledge.

b) Do any of the parties subject to a duty of disclosure under 37 CFR 1.56 know of where such documentation, as recited above, may be found? Please state the location in response to this question.

See the reply to a) above.

c) Using the language of the claims, what are the specific differences between the modeling system that is mentioned in the admission and the claims?

A claim chart is attached.

d) Were there any other modeling systems created by applicants? If so, please provide specific details of these modeling systems, using the language of the claims, and explain how they differ from the claimed invention.

No other modeling systems were created more than a year before April 16, 2004. Beginning in March 2003, the assignee began to develop a software application to assist users in developing models. Because no available products met identified requirements, a new computer-based modeling system was developed. The architecture and design of the system were complete by June 2003. Implementation of the initial version was complete by November 2003. However, in August 2003, the model project insight feature illustrated in figure 27D was sufficiently complete that customer data was analyzed and the graphical and tabular reports were used in a project for a customer.

e) Were there any other modeling systems created by applicants? If so, please provide documentation of these systems or state where such documentation may be found.

The computer-based modeling system referred to in d) was the sole modeling system created as it provided the required features.

II) Was the modeling system disclosed in the admission the subject of any of the following types of transactions: offered for sale, bartered or exchanged, licensed, donated or given away, or used for experimental use? Please answer the following interrogatories for each transaction.

a) Where did this transaction occur?

b) What were the details of the transaction?

c) What where the details of the system that formed the basis for this transaction?

d) When did this transaction occur?

e) Who were the parties involved in the transaction?

More than a year prior to April 16, 2004, the assignee received raw customer data from customers and transformed the data into customer relationship management (CRM) information (predictive scores) for customers of the assignee using the experience, expertise, and knowledge of model developers and the capabilities of commercially available model creation software, in particular, solutions from SAS Institute Inc., North Carolina. The following table lists the details of these transactions:

Contracting Party	Modeling Service Provided	Model Method	Date of Contract
Cross Country	Response Models for Marketing	Manually developed by skilled model developers/analysts assisted by standard statistical software	Annual Contract, prior to April 2003, with series of contract renewals
Member Works (now Vertue)	Response Models for Marketing	Manually developed by skilled model developers/analysts assisted by standard statistical software	Annual Contract, prior to April 2003, with series of contract renewals
Other parties to whom pitches were made	[details no longer recalled]	[details no longer recalled]	

III) Was the modeling system of this application or of the admission publicly disclosed?

No.

a) Do you have any documentation, either hard copies or in electronic form, showing what was publicly disclosed? If yes, please provide documentation in response to this interrogatory. Documentation should be interpreted broadly to include, yet not be limited to: press releases, advertisements, brochures, product manuals, web pages, presentations, technical journals, and product specifications.

None other than materials already submitted.

b) Do any of the parties subject to a duty of disclosure under 37 CFR 1.56 know of where such documentation, as recited above, may be found? Please state the location in response to this question.

The assignee does not know of the location or of any other party that may know of the location of any such documentation.

4. In response to this requirement, please provide the title, citation and copy of each publication that any of the applicants relied upon to develop the disclosed subject matter that describes the applicant's invention, particularly as to developing "transforming of the variables" and "the adjusting of the population of variables". For each publication, please provide a concise explanation of the reliance placed on that publication in the development of the disclosed subject matter.

In developing the disclosed subject matter, the applicant relied on portions of the items described in its information disclosure statements. With particular regard to "transforming of the variables" and "adjusting of the population of variables," the inventors used their knowledge, experience and expertise along with such literature disclosed in the attached and previous information disclosure statements to develop the recited features. For the examiner's reference, biographies of the inventors are attached as exhibits 1 through 3.

5. In response to this requirement, please provide the title, citation and copy of each publication that any of the applicants relied upon to draft the claimed subject matter. For each publication, please provide a concise explanation of the reliance placed on that publication in distinguishing the claimed subject matter from the prior art.

The inventors are unable to recall any specific such reliance that may have been placed.

6. In response to this requirement, please provide the names of any products or services that have incorporated the claimed subject matter.

OASYS™ Analytic Platform; this product was not offered for sale prior to April 16, 2003.

7. In response to this requirement, please state the specific improvements of the subject matter in claims 1 and 7 over the disclosed prior art and indicate the specific elements in the claimed subject matter that provide those improvements. For those claims expressed as means or steps plus function, please provide the specific page and line numbers within the disclosure that describe the claimed structure and acts.

See the related Response filed by the applicant.

All statements made in this declaration of my own knowledge are true and all statements made on information and belief are believed to be true; and further these statements were made

Attorney's Docket No.: 17146-005001

with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued on the application.

Respectfully submitted,

Date: October 1, 2007 Richard J. Mansfield

Richard Mansfield

EXHIBIT B

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Stephen K. Pinto et al.
Art Unit : 2121
Serial No. : 10/826,949
Examiner : Tejal Gami
Filed : April 16, 2004
Conf. No. : 1606

Title : DIMENSION REDUCTION IN PREDICTIVE MODEL DEVELOPMENT

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CLAIM CHART

Claim 1	
A machine-based method comprising	In the prior approach, the model developers/users used their knowledge, experience and expertise to develop individual custom-designed models *manually* using conventional a statistical software package, in particular, software provided by SAS Institute Inc., North Carolina.
receiving historical multi-dimensional data representing multiple variables,	The prior approach used historical multi-dimensional data.
transforming variables into more predictive variables, including Bayesian renormalized variables, linearly transformed and non-linearly transformed variables and imputed missing values for categorical or continuous variables,	In the prior approach, the model developers/users manually transformed variables into more predictive variables using conventional statistical tools. The prior approach included imputation of missing values for categorical or continuous variables but only with traditional methods. The prior approach did not include Bayesian renormalization.
pruning variables for which the data is sparse or missing,	In the prior approach, pruning of variables for which the data was spare or missing was done manually.
adjusting a population of variables to represent main effects exhibited by the data	In the prior approach, mainly first-order interaction

and significant interaction and non-linear effects exhibited by the data.	effects were considered.
using the population of variables to generate a predictive model for interacting with a commercial system.	In the prior approach, the model developers/users used their knowledge, experience and expertise to manually generate a predictive model for interacting with a commercial system.
Claim 2	
The method of claim 1 in which adjusting the population of variables to represent interaction effects includes stages of main effect interactions, main effects with main effect interactions and excluded variable interactions, and main effects with main effect interactions and excluded variable interactions together with excluded variable combined interactions.	In the prior approach, mainly first-order interaction effects were considered.
Claim 3	
The method of claim 1 in which the predictive model predicts behavior of a current customer with respect to retention of a current service or product of a vendor.	In the prior approach, the model developers/users manually "[predicted the] behavior of a current customer with respect to retention of a current service or product of a vendor," using their knowledge, experience and expertise along with conventional statistical software packages.
Claim 4	
The method of claim 1 in which the predictive model predicts behavior of a current customer with respect to risk of asserting claims, loan payment or prepayment to a vendor.	The prior approach did not include this feature.
Claim 5	
The method of claim 1 in which the predictive model predicts behavior of a current customer with respect to usage of a current service or product of a vendor.	In the prior approach, the modelers/users manually "[predicted the] behavior of a current customer with respect to usage of a current service or product of a vendor," using their knowledge, experience and expertise along with conventional statistical software packages.

Claim 6	
The method of claim 1 also including enabling a user to reconstruct a sequence of choices involved in the creation of the predictive model.	The prior approach did not include this feature.
Claim 7	
A machine-based method comprising	In the prior approach, the model developers/users used their knowledge, experience and expertise to manually develop individual custom-designed models using conventional statistical software package, in particular, software provided by SAS Institute Inc., North Carolina.
in connection with a project based on historical data about a system being modeled, generating a predictive model, and	The prior approach used historical data about a system. The model developers/users used their knowledge, experience and expertise to and a commercially available statistical software package to manually generate a predictive model.
providing to the a user through a graphical user interface a sequence of dimension reduction having two or more steps.	The prior approach did not include this feature.
Claim 8	
The method of claim 7 in which the system being modeled comprises behavior of prospective or current customers of a vendor with respect to products or services offered by the vendor.	This feature of the system being modeled was part of the prior approach.
Claim 9	
The method of claim 7 in which the predictive model predicts behavior of a prospective or current customer with respect to purchase of a product or service of a vendor.	This feature of the predictive model was in the prior approach.
Claim 10	
The method of claim 7 in which the predictive model predicts behavior of a current customer with respect to retention	This feature of the predictive model was in the prior approach.

of a current service or product of a vendor.	
Claim 11	
The method of claim 7 in which the predictive model predicts behavior of a current customer with respect to risk of asserting claims, loan payment or prepayment to a vendor.	The prior approach did not include this feature.
Claim 12	
The method of claim 7 in which the predictive model predicts behavior of a current customer with respect to usage of a current service or product of a vendor.	This feature of the predictive model was in the prior approach.
Claim 13	
The method of claim 7 in which the user interface controls staging of the sequence of model generation activities.	The prior approach did not include this feature.

EXHIBIT C

Dr. Richard Mansfield, Chief Architect
Senior Management Biography

Fortelligent

Dr. Mansfield has more than 15 years of successful, progressive experience in all phases of mission-critical software product and systems development. He is the author or co-author of a number of software patents. His role at Fortelligent is to design and develop Fortelligent's OASYS Analytic Platform™ and to provide technical oversight of Fortelligent's systems, software and processes to ensure optimization for business advantage.

Dr. Mansfield earned his Ph.D. from Harvard University and a Master's from Yale University in Mathematics. He was a Visiting Scholar at the Johns Hopkins School of Medicine as well.

EXHIBIT D

Stephen K. Pinto, Senior Vice President
Senior Management Biography

Fortelligent

Steve Pinto has been at the forefront of predictive analytics for over 30 years. Over that time he has formulated many of the modern-day methodologies used in database marketing and modeling. He is responsible for Product Development, Account Management, and client deliverables at Fortelligent. His prior experience includes:

At Mercer Management Consulting, a global strategy firm, Steve was a Vice President and a lead developer of the Customer Relationship Management practice. He was responsible for developing the worldwide practice for CRM at Mercer. The practice develops analytical CRM program on behalf of diversified Global 2,000 clients and manages those programs on an ongoing basis to help generate increasing shareholder value.

Prior to his work at Mercer Management Consulting, Steve was the Managing Director of the Analytic Consulting Group at Epsilon, a former division of American Express. Steve was responsible for creating and deploying analytical CRM programs on behalf of the largest financial institutions in the country.

Before Epsilon, Steve Co-Founded Applied Research of Cambridge, a worldwide market research firm later acquired by Cap Gemini, a global strategy consulting firm.

Steve is a widely published author on the subject of predictive analytics and is on several editorial boards including the *Journal of Database Marketing.*

EXHIBIT E

Dr. Donald Rubin, Scientific Principal
Senior Management Biography

Fortelligent

Fortelligent's Scientific Advisor is the world-renown statistician, Professor Donald Rubin. His role at Fortelligent has been to contribute to the development of Fortelligent's Platform by designing unique algorithms and methodologies that enable Fortelligent to maintain an ongoing competitive edge.

Professor Rubin is a world-leading thinker in Statistical Science. In 2002 he was one of the most quoted scholars in the field of statistics. Currently he is Chairman of the Statistics Department at Harvard University, a position he has held for 20 years. He is the John L. Loeb Professor of Statistics and key PhD advisor to Candidates for degrees in Statistics at Harvard as well.

Prior roles held at Harvard University include:

- Chairman, Department of Statistics Senior Search Committee
- Director of Graduate Studies, Department of Statistics

Faculty Staff, Program on Educational Policy and Governance

Professor Rubin is a widely known force in the statistical community, having published over 300 articles and book on various statistical-related topics.

EXHIBIT 3

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Stephen K. Pinto et al.	Art Unit	: 2121
Serial No.	: 10/826,947	Examiner	: Tejal Gami
Filed	: April 16, 2004	Conf. No.	: 1606

Title : DIMENSION REDUCTION IN PREDICTIVE MODEL DEVELOPMENT

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION IN RESPONSE TO REQUEST FOR INFORMATION IN ACTION DATED MARCH 29, 2007

I, Richard Mansfield, declare:

I am the Chief Architect and Vice President Platform Technologies of Fortelligent, Inc., the assignee of this patent application.

My comments below are each preceded by the related requests of the examiner (in small, bold type).

I) What were the specific details of the modeling system referred to in the admission?

More than a year prior to April 16, 2004, the assignee's employees used individual custom-designed models to generate customer relationship management (CRM) information for customers of the assignee. The individual custom-designed models were each generated manually using the experience, expertise, and knowledge of model developers and the capabilities of commercially available statistical software, in particular, solutions from SAS Institute Inc., North Carolina.

From its records, the assignee is unable to reconstruct the contents of any of the specific individual custom-designed models in use prior to April 16, 2003, or the manner in which they were generated other than as disclosed in the information disclosure statement of May 27, 2005.

a) Do you have any documentation, either hard copies or in electronic form, showing this modeling system? If yes, please provide documentation in response to this interrogatory. Documentation should be interpreted broadly to include, yet not be limited to: press releases,

advertisements, brochures, product manuals, web pages, patents and patent applications (both U.S. and foreign), presentations, technical journals, and product specifications.

None to the best of the undersigned's knowledge.

b) Do any of the parties subject to a duty of disclosure under 37 CFR 1.56 know of where such documentation, as recited above, may be found? Please state the location in response to this question.

See the reply to a) above.

c) Using the language of the claims, what are the specific differences between the modeling system that is mentioned in the admission and the claims?

A claim chart is attached.

d) Were there any other modeling systems created by applicants? If so, please provide specific details of these modeling systems, using the language of the claims, and explain how they differ from the claimed invention.

No other modeling systems were created more than a year before April 16, 2004. Beginning in March 2003, the assignee began to develop a software application to assist users in developing models. Because no available products met identified requirements, a new computer-based modeling system was developed. The architecture and design of the system were complete by June 2003. Implementation of the initial version was complete by November 2003. However, in August 2003, the model project insight feature illustrated in figure 27D was sufficiently complete that customer data was analyzed and the graphical and tabular reports were used in a project for a customer.

e) Were there any other modeling systems created by applicants? If so, please provide documentation of these systems or state where such documentation may be found.

The computer-based modeling system referred to in d) was the sole modeling system created as it provided the required features.

II) Was the modeling system disclosed in the admission the subject of any of the following types of transactions: offered for sale, bartered or exchanged, licensed, donated or given away, or used for experimental use? Please answer the following interrogatories for each transaction.

a) Where did this transaction occur?

b) What were the details of the transaction?

c) What where the details of the system that formed the basis for this transaction?

d) When did this transaction occur?

e) Who were the parties involved in the transaction?

More than a year prior to April 16, 2004, the assignee received raw customer data from customers and transformed the data into customer relationship management (CRM) information (predictive scores) for customers of the assignee using the experience, expertise, and knowledge of model developers and the capabilities of commercially available model creation software, in particular, solutions from SAS Institute Inc., North Carolina. The following table lists the details of these transactions:

Contracting Party	Modeling Service Provided	Model Method	Date of Contract
Cross Country	Response Models for Marketing	Manually developed by skilled model developers/analysts assisted by standard statistical software	Annual Contract, prior to April 2003, with series of contract renewals
Member Works (now Vertue)	Response Models for Marketing	Manually developed by skilled model developers/analysts assisted by standard statistical software	Annual Contract, prior to April 2003, with series of contract renewals
Other parties to whom pitches were made	[details no longer recalled]	[details no longer recalled]	

III) Was the modeling system of this application or of the admission publicly disclosed?

No.

a) Do you have any documentation, either hard copies or in electronic form, showing what was publicly disclosed? If yes, please provide documentation in response to this interrogatory. Documentation should be interpreted broadly to include, yet not be limited to: press releases, advertisements, brochures, product manuals, web pages, presentations, technical journals, and product specifications.

None other than materials already submitted.

b) Do any of the parties subject to a duty of disclosure under 37 CFR 1.56 know of where such documentation, as recited above, may be found? Please state the location in response to this question.

The assignee does not know of the location or of any other party that may know of the location of any such documentation.

4. In response to this requirement, please provide the title, citation and copy of each publication that any of the applicants relied upon to develop the disclosed subject matter that describes the applicant's invention, particularly as to developing "transforming of the variables" and "the adjusting of the population of variables". For each publication, please provide a concise explanation of the reliance placed on that publication in the development of the disclosed subject matter.

In developing the disclosed subject matter, the applicant relied on portions of the items described in its information disclosure statements. With particular regard to "transforming of the variables" and "adjusting of the population of variables," the inventors used their knowledge, experience and expertise along with such literature disclosed in the attached and previous information disclosure statements to develop the recited features. For the examiner's reference, biographies of the inventors are attached as exhibits 1 through 3.

5. In response to this requirement, please provide the title, citation and copy of each publication that any of the applicants relied upon to draft the claimed subject matter. For each publication, please provide a concise explanation of the reliance placed on that publication in distinguishing the claimed subject matter from the prior art.

The inventors are unable to recall any specific such reliance that may have been placed.

6. In response to this requirement, please provide the names of any products or services that have incorporated the claimed subject matter.

OASYS™ Analytic Platform; this product was not offered for sale prior to April 16, 2003.

7. In response to this requirement, please state the specific improvements of the subject matter in claims 1 and 7 over the disclosed prior art and indicate the specific elements in the claimed subject matter that provide those improvements. For those claims expressed as means or steps plus function, please provide the specific page and line numbers within the disclosure that describe the claimed structure and acts.

Attorney's Docket No.: 17146-008001

See the related Response filed by the applicant.

All statements made in this declaration of my own knowledge are true and all statements made on information and belief are believed to be true; and further these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued on the application.

Respectfully submitted,

Date: October 1, 2007 Richard J Mansfield

Richard Mansfield

EXHIBIT B

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Stephen K. Pinto et al.
Serial No. : 10/826,947
Filed : April 16, 2004
Art Unit : 2121
Examiner : Tejal Gami
Conf. No. : 1609

Title : PREDICTIVE MODEL VALIDATION

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CLAIM CHART

Claim 1	**Comments**
A machine-base method comprising	In the prior approach, the model developers/users used their knowledge, experience and expertise to develop individual custom-designed models *manually* using conventional statistical software package, in particular, software provided by SAS Institute Inc., North Carolina
in connection with a project, generating a predictive model based on historical data about a system being modeled, enabling the user to validate a model development process with a predictive model between at least two subsets of the historical data, and interacting with the system being modeled based on the predictive model.	In the prior approach, the model developers/users used their knowledge, experience and expertise to validate a specific model *manually* using a conventional approach and a conventional statistical software package, in particular, software provided by SAS Institute Inc., North Carolina, rather than "enabling the user to validate a model development process."
Claim 2	
The method of claim 1 in which a user interface display project goals enabling the user to assess model project performance wherein the project goals comprise at least one of: cumulative lift over an interval of interest, degree of monotonicity, or concordance scores.	In the prior approach, the model developers/users used their knowledge, experience and expertise to *manually* develop individual custom-designed models using conventional statistical software package, in particular, software provided by SAS Institute Inc., North Carolina, which could print tables for comparing conventional measures such as cumulative lift, concordance (minimum false negatives or minimum false positives), and monotonicity. In the prior approach, there was no user interface that displayed "project goals enabling the user to assess model project performance ...".

Claim 3	
The method of claim 2 also including identifying that the model does not produce at least a predefined degree of lift for at least one of the validation datasets.	In the prior approach, as one criterion of performance, a user manually could use low lift is a conventional heuristic.
Claim 4	
The method of claim 3 also including enabling a user to choose interactively at least one model development criterion change or transformation or interaction of variables to improve a fit of the model.	In the prior approach, the model developers/users manually transformed variables into more predictive variables using conventional statistical tools using expert estimation and guesswork in making additional transformations and interactions. The user was not enabled "to choose interactively at least one model development criterion or transformation or interaction of variables to improve the fit of the model."
Claim 5	
The method of claim 4 also including graphically displaying and comparing measures of performance for the validation dataset and a training dataset.	The prior approach did not include "graphically displaying and comparing measures of performance for the validation dataset and the training dataset." Users could, however, use a third party software package, such as Microsoft Excel, to construct a comparison chart.
Claim 6	
A machine-based method comprising	In the prior approach, the model developers/users used their knowledge, experience and expertise to *manually* develop individual custom-designed models using conventional statistical software package, in particular, software provided by SAS Institute Inc., North Carolina
in connection with a process, generating a predictive model based on historical data about a system being modeled, using a validated model development process, to enable automatic transformations of variables of the data, automatic generation of a predictive model, and automatic generation of performance measures of the predictive model on at least two independent	In the prior approach, the model developers/users used their knowledge, experience and expertise to validate a specific model *manually* using a conventional approach and a conventional statistical software package, in particular, software provided by SAS Institute Inc., North Carolina, rather than using "a validated model development process." In the prior approach, transformations of variables of the data were done manually as were generation of

datasets of historical data, and interacting with the system being modeled based on the predictive model.	performance measures of the predictive model on at least two indepenend data sets.
Claim 7	
The method of claim 6 also including generating measures of the performance of the model for the two datasets, the performance measures being generated separately percentile by percentile	In the prior approach, measurs of the performance of the model for the two datasets was performed manually using conventional statistical tools, expert estimation, and guesswork.
Claim 8	
The method of claim 6 also including graphically displaying and comparing measures of performance for the two datasets.	see notes for claim 5
Claim 9	
The method of claim 6 also including persistently storing the validated model development process and a validated model for computing propensities for at least one target outcome variable, the propensities serving as indices of a score for non-historical data.	In the prior approach, there was no persistent storing of the validated model development process. Model developers/users could, however, save the model equation in a file on a computer along with the computed propensities.
Claim 10	
The method of claim 6 also including providing a user interface for assessing project goals against performance.	In the prior approach, there was no user interface for assessing model project goals against performance; however, the model developers/users could manually compare the project goals against performance.
Claim 11	
The method of claim 6 also including providing a user interface for selecting at least one subset of the historical data in addition to a training subset.	In the prior approach, there was no user interface for selecting at least one subset of the historical data in addition to the training subset; however, the model developers/users could manually generate a subset by writing interpretive code for the conventional statistical package.
Claim 12	
The method of claim 6 providing a user interface for displaying the performance	In the prior approach, there was no user interface for

of the model for at least two subsets of the historical data for an interval of interest.	displaying the performance of the model for at least two subsets of the historical data for an interval of interest. However, users could manually employ another third party software package, such as Microsoft Excel, to construct a comparion chart.
Claim 13	
The method of claim 6 enabling a user to choose interactively at least one transformation or interaction of variables to improve the model validation process.	In the prior approach, the user was not enabled to choose interactively. The model developers/users could, however, manually choose by writing interpretive code for the conventional statistical package. [Richard, is this correct?]
Claim 14	
The method of claim 6 determining whether the model generalizes to the data other than a subsample, and, if so, applying a possible model to all of the data to generate a final model, and cross-validating the final model using random portions of the data.	The prior approach did not include applying a possible model to all of the data to generate a final model or cross-validating the final model using random portions of the data.
Claim 15	
The method of claim 6 providing a user interface that enables the user to select at least one validation dataset and invoke a model process validation method.	The prior approach provided no user interface that enabled selecting a validation dataset and permitted invocation of a model process validation method. However, the model developers/users manually generated such a subset by writing interpretive code for the conventional statistical package.
Claim 16	
The method of claim 6 providing a user interface that enables the user to point and click to cause display of information about the model process validation.	In the prior approach, no user interface enabled the user to point and click to cause display of information about the model process validation.
Claim 17	
The method of claim 16 in which the information about the model process validation includes at least one of: a statistical report card with a link to the statistical report chart, a cumulative lift chart with a link to the cumulative lift chart, and a non-cumulative lift chart with	In the prior approach, no user interface provided information about a model process validation that included at least one of: a statistical report card with a link to the statistical report chart, a cumulative lift chart with a link to the cumulative lift chart, or a non-cumulative lift chart.

of the model for at least two subsets of the historical data for an interval of interest.	displaying the performance of the model for at least two subsets of the historical data for an interval of interest. However, users could manually employ another third party software package, such as Microsoft Excel, to construct a comparion chart.
Claim 13	
The method of claim 6 enabling a user to choose interactively at least one transformation or interaction of variables to improve the model validation process.	In the prior approach, the user was not enabled to choose interactively. The model developers/users could, however, manually choose by writing interpretive code for the conventional statistical package. [Richard, is this correct?]
Claim 14	
The method of claim 6 determining whether the model generalizes to the data other than a subsample, and, if so, applying a possible model to all of the data to generate a final model, and cross-validating the final model using random portions of the data.	The prior approach did not include applying a possible model to all of the data to generate a final model or cross-validating the final model using random portions of the data.
Claim 15	
The method of claim 6 providing a user interface that enables the user to select at least one validation dataset and invoke a model process validation method.	The prior approach provided no user interface that enabled selecting a validation dataset and permitted invocation of a model process validation method. However, the model developers/users manually generated such a subset by writing interpretive code for the conventional statistical package.
Claim 16	
The method of claim 6 providing a user interface that enables the user to point and click to cause display of information about the model process validation.	In the prior approach, no user interface enabled the user to point and click to cause display of information about the model process validation.
Claim 17	
The method of claim 16 in which the information about the model process validation includes at least one of: a statistical report card with a link to the statistical report chart, a cumulative lift chart with a link to the cumulative lift chart, and a non-cumulative lift chart with	In the prior approach, no user interface provided information about a model process validation that included at least one of: a statistical report card with a link to the statistical report chart, a cumulative lift chart with a link to the cumulative lift chart, or a non-cumulative lift chart.

a link to the non-cumulative lift chart.	
Claim 18	
The method of claim 17 in which invocation of the link to the statistical report card causes display of the statistics of model process validation.	Not present in a user interface of the prior approach.
Claim 19	
The method of claim 17 in which invocation of the link to the cumulative lift chart causes display of a cumulative lift chart.	Not present in a user interface of the prior approach.
Claim 20	
The method of claim 17 in which invocation of the link to the cumulative lift chart causes display of a non-cumulative lift chart.	Not present in a user interface of the prior appoach.
Claim 21	
The method of claim 17 in which a user is enabled to choose interactively at least one performance criterion change or transformation or interaction of variables to improve the model validation process.	Not enabled in the prior approach.
Claim 22	
The method of claim 6 also including providing a user interface that enables the user to select at least one machine automated model development process applied to the entire dataset for a validated model process.	Not present in the prior approach.
Claim 23	
The method of claim 6 also including providing a user interface that enables the user to point and click to cause display of information about the performance of the validated model process applied to the entire set of historical data.	In the prior approach, there was no user interface that enabled the user to point and click to cause display of such information.
Claim 24	
The method of claim 23 in which the information about the model performance	In the prior approach, no user interface provided

for two independent data subsets includes at least one of the following: a statistical report card with a link to the statistical report chart, a cumulative lift chart with a link to the cumulative lift chart, a non-cumulative lift chart with a link to the non-cumulative lift chart.	information about a model performance for two independent data subsets that included at least one of: a statistical report card with a link to the statistical report chart, a cumulative lift chart with a link to the cumulative lift chart, or a non-cumulative lift chart.
Claim 25	
The method of claim 24 in which the invocation of the link to the statistical report card causes display of the statistics of model process validation.	Not present in the user interface of the prior approach.
Claim 26	
The method of claim 24 in which the invocation of the link to the cumulative lift chart causes display of a cumulative lift chart.	Not present in the user interface of the prior approach.
Claim 27	
The method of claim 24 in which the invocation of the link to the cumulative lift chart causes display of a non-cumulative lift chart.	Not present in the user interface of the prior approach.
Claim 28	
The method of claim 6 also including storing the final model and the model process validation results persistently.	In the prior approach, the model developers/users manually generated interpretive code for the conventional statistical package to persistly store in computer file storage the final model and numeric model validation results.

EXHIBIT C

Dr. Richard Mansfield, Chief Architect

Senior Management Biography

Fortelligent

Dr. Mansfield has more than 15 years of successful, progressive experience in all phases of mission-critical software product and systems development. He is the author or co-author of a number of software patents. His role at Fortelligent is to design and develop Fortelligent's OASYS Analytic Platform™ and to provide technical oversight of Fortelligent's systems, software and processes to ensure optimization for business advantage.

Dr. Mansfield earned his Ph.D. from Harvard University and a Master's from Yale University in Mathematics. He was a Visiting Scholar at the Johns Hopkins School of Medicine as well.

EXHIBIT D

Stephen K. Pinto, Senior Vice President
Senior Management Biography

Fortelligent

Steve Pinto has been at the forefront of predictive analytics for over 30 years. Over that time he has formulated many of the modern-day methodologies used in database marketing and modeling. He is responsible for Product Development, Account Management, and client deliverables at Fortelligent. His prior experience includes:

At Mercer Management Consulting, a global strategy firm, Steve was a Vice President and a lead developer of the Customer Relationship Management practice. He was responsible for developing the worldwide practice for CRM at Mercer. The practice develops analytical CRM program on behalf of diversified Global 2,000 clients and manages those programs on an ongoing basis to help generate increasing shareholder value.

Prior to his work at Mercer Management Consulting, Steve was the Managing Director of the Analytic Consulting Group at Epsilon, a former division of American Express. Steve was responsible for creating and deploying analytical CRM programs on behalf of the largest financial institutions in the country.

Before Epsilon, Steve Co-Founded Applied Research of Cambridge, a worldwide market research firm later acquired by Cap Gemini, a global strategy consulting firm.

Steve is a widely published author on the subject of predictive analytics and is on several editorial boards including the *Journal of Database Marketing.*

EXHIBIT E

Dr. Donald Rubin, Scientific Principal
Senior Management Biography

Fortelligent

Fortelligent's Scientific Advisor is the world-renown statistician, Professor Donald Rubin. His role at Fortelligent has been to contribute to the development of Fortelligent's Platform by designing unique algorithms and methodologies that enable Fortelligent to maintain an ongoing competitive edge.

Professor Rubin is a world-leading thinker in Statistical Science. In 2002 he was one of the most quoted scholars in the field of statistics. Currently he is Chairman of the Statistics Department at Harvard University, a position he has held for 20 years. He is the John L. Loeb Professor of Statistics and key PhD advisor to Candidates for degrees in Statistics at Harvard as well.

Prior roles held at Harvard University include:

- Chairman, Department of Statistics Senior Search Committee
- Director of Graduate Studies, Department of Statistics

Faculty Staff, Program on Educational Policy and Governance

Professor Rubin is a widely known force in the statistical community, having published over 300 articles and book on various statistical-related topics.